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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,933	11/17/2003	Leslie Bromberg	0492611-0529	4243
24280	7590	01/03/2005	EXAMINER	
Choate, Hall & Stewart			BENTON, JASON	
Exchange Place			ART UNIT	
53 State Street			PAPER NUMBER	
Boston, MA 02109			3747	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/715,933

Applicant(s)

BROMBERG ET AL.

Examiner

Jason Benton

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/17/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-19, and 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Cohn et al.

The patent by Cohn et al. (5,887,554) shows a method for providing an engine operating control. At least a fraction of fuel is reformed in an onboard reformer (20). The reformat is injected from the onboard fuel reformer into a charge intake of an engine cylinder (40). The compression ignition properties of the charge intake are controlled by at least one of adjusting composition of the reformat and controlling a temperature of the charge intake based on exothermicity of reactions in the onboard fuel reformer.

A bias flow that increases or decreases fluid flow through the reformer is controlled.

The reformat is used to establish temperature gradients in the engine cylinder.

The onboard fuel reformer is a fast starting reformer that allows for adequate engine operation during start up when the engine is run as a spark ignition engine and allows for adequate engine operation in the presence of transients.

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The onboard fuel reformer is a plasmatron (20) fuel converter. The onboard fuel reformer can include a catalyst (296).

The reformat (64) is premixed with air before being injected into the charge intake of the engine cylinder (Fig. 7).

The reformat can be injected directly into the charge intake of the engine cylinder (Fig. 9).

The reformat is passed through a heat exchanger (296) prior to injection into the cylinder.

The reformer is controlled by signals that are controlled by a computer having engine sensors for evaluation of engine operation and that takes into account operator requirements (52b).

The computer is adapted to receive as input external operator requirements (response to accelerator pedal).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

ClaimS 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohn et al. in view of Ward et al.

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The patent by Cohn et al. (5,887,54) does not show that the charge intake is stratified so that the reformat in the engine cylinder is non-uniform. The patent by Ward (3,425,399) shows an engine using a gaseous fuel that is stratified so that the distribution in the engine cylinder is non-uniform (Col. 3, lines 25-38). In view of Ward et al., it would have been obvious to one skilled in the art who wanted a gaseous reformat fuel to be adequately dispersed in the cylinder to improve on Cohn et al. by stratifying the charge intake.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Benton whose telephone number is (571) 272-4838. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (571) 272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Nathan P. Kamen
Primary Examiner

JB